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Organic or psychosomatic? A cross-sectional study

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Abstract

Aim: Symptomatic treatments of psychosomatic symptoms are not successful because they cannot solve true etiological causes. To resolve the disorder, it is first necessary to investigate and diagnose the underlying cause and persuade the patient to use the appropriate drugs. In this study, it was aimed to make suggestions in order to identify patients who may have psychiatric symptoms and to prevent unnecessary invasive procedures by scanning psychosomatic symptoms prior to endoscopy indication.

Material and Methods: The Cornell index, Beck depression and Anxiety scales, and the Somatization scale were applied to 140 patients whose EGD procedure was planned. The patients were divided into three groups as normal endoscopic examination, antral gastritis, and other disease diagnoses (erosive gastritis, gastric ulcer, etc.). Beck Depression and Beck Anxiety Inventory scores were statistically lower in other diagnostic groups than in normal endoscopic findings and antral gastritis groups. Also, scores on the somatization scale were significantly higher in normal endoscopic findings and antral gastritis groups compared to other diagnostic groups.

Results: In patients who underwent EGD, the process was found to be more likely to cause normal endoscopic examination as the age decreased. In addition, somatization, Cornell index, anxiety and depression scores were higher at a young age.

The Cornell Medical Index showed a significantly higher sub-score of the strong neurotic structure in the antral gastritis group compared to the other groups. Similarly, there were significantly higher scores for the subscales of depression, irritability-anxiety, fear-startle, psychosomatic symptoms, hypochondriasis, and gastrointestinal disorders in the antral gastritis group compared to other diagnostic groups

Discussion: Our results show that applying the somatization scale or an equivalent screening scale to screen psychiatric symptoms before seeking endoscopic examination, especially in the young population, can provide early treatment and prevent increased treatment costs.

Keywords

Psychosomatic, Esophagogastroduodenoscopy, Somatization, Anxiety, Depression, Gastritis

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Introduction

Somatic symptoms associated with psychiatric disorders have been the subject of many studies [1,3]. Symptomatic treatments for psychosomatic symptoms are not successful because they cannot resolve the true etiological causes. In order to resolve the disorder, it is first necessary to investigate and diagnose the underlying cause and to convince the patient to use appropriate medications. Furthermore, it should not be ignored that there is a possibility that the psychiatric background of a somatic complaint may be rejected by patients.

Somatic symptoms may occur in many psychiatric diagnoses, with a high frequency of somatic gastrointestinal symptoms [4]. Psychiatric disorders associated with gastrointestinal symptoms may include anxiety disorder, depression and somatoform disorders [4,5].

Esophagogastroduodenoscopy (EGD) has been widely used as a diagnostic and therapeutic tool for upper gastrointestinal system diseases [6]. In Turkey, there is a high number of medical interventions because of a health system with easy access to physicians. Excess endoscopic procedures cause labor and financial losses, expose patients to unnecessary interventional procedures, and delay access to treatment for malignancies that require early diagnosis [7]. This can lead to an increase in morbidity and mortality rates in cases that can be solved with a simple procedure.

The literature review performed while designing the research protocol showed that studies on the psychogenic etiology of gastrointestinal complaints mostly have focused on functional dyspepsia, but did not adequately address other psychiatric diagnoses [6,7]. In this study, we aimed to eliminate the gap in the literature by examining the upper gastrointestinal reflections of disorders such as depression, anxiety disorder and somatization.

In our study, we aimed to provide pre-procedural recognition of cases with psychosomatic symptoms, which have a large proportion of EGD procedures, and to raise awareness of gastroenterologists or general surgeons about such symptoms, thus avoiding unnecessary procedures.

Material and Methods

Study population and design

Ethical approval for our study was obtained from the institutional ethics committee of Gazi Yasargil Training and Research Hospital (Protocol number: 102; approval date 22/06/2018). After determining the indication for EGD, written consent was obtained from the patients who came to the endoscopy unit to make an appointment. Then, the psychiatrists in the study applied the scales to the patients. Thus, we tested patients who had not yet undergone EGD before determining the presence of a disease or psychosomatic symptoms, and tried to eliminate possible biases in the test results. Scales were applied to 140 patients who were scheduled for an EGD procedure. In addition, 16 patients who did not undergo EGD or did not complete the tests appropriately were excluded from the assessment.

Our study was the first to investigate the association between upper gastrointestinal diagnoses and common psychiatric disorders such as depression, anxiety disorder and somatization, thus aiming to fill an important gap in this issue.

In our study, we paid attention to the selection of scales with consistent results among themselves. The Cornell index is a large scale used to screen for psychiatric disorders and psychosomatic symptoms. In addition, the Beck depression and anxiety scales provide an idea by measuring the severity of anxiety disorder and depression. In addition, the somatization scale is a scale that shows only the severity of somatic complaints, which was prepared by combining items that scan somatic symptoms in the Minnesota Multifaceted Personality Inventory (MMPI).

Statistical analysis

Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) software version 23.0 (SPSS, Chicago, Ill., USA). Analysis of categorical data was performed using the Chi-square test. For the analysis of quantitative data, t-test was used in paired groups. However, ANOVA (post hoc Tukey's test) was used in multiple groups because parametric assumptions were not met. Finally, Pearson's correlation analysis was used to determine the direction and magnitude of the relationship between two quantitative variables. A p-value of <0.05 was considered statistically significant.

Results

There was no significant difference between the diagnostic groups in terms of sociodemographic data (Table 1).

The Cornell Medical Index showed a significantly higher sub-score of the strong neurotic structure in the antral gastritis group compared to the other groups. Similarly, there were significantly higher scores for the subscales of depression, irritability-anxiety, fear-startle, psychosomatic symptoms, hypochondriasis, and gastrointestinal disorders in the antral gastritis group compared to other diagnostic groups (Table 2).

ANOVA - post hoc Tukey's test was used. * $p<0.05$, compared to normal group; ** $p<0.05$, compared with normal and antral gastritis groups; and *** $p<0.01$, compared with normal and antral gastritis groups

Of the 124 participants included in our study, 64 were females and 60 were males. The mean age of the patients was 27.81 ± 10.15 years.

Mean age was significantly higher in the group with other diagnoses compared to normal endoscopic findings and antral gastritis groups. Similarly, the age of onset of the disease was statistically higher in the group with other diagnoses compared to normal endoscopic findings and antral gastritis groups.

The scores from Beck Depression and Beck Anxiety Inventory scales were statistically lower in the group with other diagnoses compared to normal endoscopic findings and antral gastritis groups.

In addition, the scores of the somatization scale were also significantly higher in normal endoscopic findings and antral gastritis groups compared to the group with other diagnoses (Table 3).

Pearson's correlation analysis of the scores obtained from Beck depression and somatization scales showed a statistically significant relationship between the scores on the scales (R: 0.574, $p<0.001$).

Likewise, Pearson's correlation analysis of the scores obtained from the Beck anxiety and somatization scale showed that

there was a statistically significant relationship between the scores of the scales (R: 0.693, p<0.001).

Discussion

The somatic repercussions of psychiatric disorders are challenging for physicians from many disciplines in terms of establishing diagnosis and treatment. Lack of understanding whether symptoms are indicative of a psychiatric disorder or an organic cause may result in excessive examinations and symptomatic treatments. Somatic symptoms may occur in most psychiatric disorders, including anxiety disorder, depression and somatization disorder, which have been frequently investigated in studies [8,9].

It has long been known that depression is associated with somatic symptoms and hypochondriac occupations [10,11]. Somatic symptoms associated with depression cause patients to digress from depressive symptoms and deal with their physical complaints, which leads them to refer to non-psychiatric departments. Symptomatic treatments administered by these departments cannot provide a permanent improvement, which may lead to repeated outpatient visits [12,13]. Boven et al. reported that somatic symptoms were associated with depression and anxiety disorder. Prospective studies also found a significant relationship between somatic symptoms and depression and anxiety disorder [11]. Consistent with the literature, our study found significantly higher scores from the depression, anxiety and somatization scales in groups with normal findings or antral gastritis detected by EGD procedure.

The literature review reveals the necessity of questioning the attitudes and recognition levels of physicians against psychiatric disorders. Some studies have shown that psychiatric symptoms are not sufficiently recognized by physicians, with recognition rates ranging from 22 to 80%. It has been reported that physicians may miss psychiatric symptoms, as well as avoid establishing psychiatric diagnoses, which stems from the desire to avoid stigmatizing the patient with a psychiatric diagnosis [14,15]. This may cause patients to seek symptomatic treatment by digressing from the treatment for true etiological cause, which may lead to repeated outpatient visits and thus increases treatment costs [16].

Abdominal pain and especially epigastric pain, which are frequently reported somatic symptoms, suggest gastritis and other organic causes related to the stomach in internal medicine practice. The EGD procedure, which is an easily accessible method for determining the etiological origin of these symptoms, is often used for the exclusion of other diagnoses and for therapeutic purposes. In our center, 4618 EGD procedures were performed between January 2017 and January 2018.

In Turkey, the general health insurance system is in force and the social security institution covers the fees of the procedures performed in all hospitals affiliated to the ministry of health. The absence of a referral chain to hospitals affiliated to the ministry of health or universities results in the application of patients, who can be treated even in primary care centers, to tertiary hospitals. This may lead to an increase in workload and

Table 1. Sociodemographic characteristics of the study groups

	Normal endoscopic findings (n: 19)		Antral gastritis (n: 61)		Other (n: 44)		X2	p
	n	(%)	n	(%)	n	(%)		
Gender							2.600	0.273
Female	13	(68.4)	29	(47.5)	22	(50.0)		
Male	6	(31.6)	32	(52.5)	22	(50.0)		
Marital status							0.213	0.899
Single	11	(57.9)	36	(59.0)	24	(54.5)		
Married	8	(42.1)	25	(41.0)	20	(45.5)		
Educational level							4.246	0.936
Illiterate	0	(0.0)	1	(1.6)	0	(0.0)		
Literate	0	(0.0)	3	(4.9)	1	(2.3)		
Primary school graduate	6	(31.6)	10	(16.1)	10	(22.7)		
Secondary school graduate	4	(21.1)	15	(24.6)	10	(22.7)		
High school graduate	6	(31.6)	15	(24.6)	15	(34.1)		
University graduate	3	(15.8)	20	(32.8)	8	(18.2)		
Living with							7.050	0.316
Parents	12	(63.2)	36	(59.0)	20	(45.5)		
Spouse and child	7	(36.8)	25	(41.0)	21	(47.7)		
Alone	0	(0.0)	0	(0.0)	2	(4.5)		
Social Security Institution	0	(0.0)	0	(0.0)	1	(2.3)		
Place of residence							2.115	0.715
Province	12	(63.2)	37	(60.7)	29	(65.9)		
District	3	(15.8)	11	(18.0)	10	(22.7)		
Village	4	(21.1)	13	(21.3)	5	(11.4)		
Employment Status							3.230	0.199
Unemployed	3	(15.8)	21	(34.4)	17	(38.6)		
Employed	16	(84.2)	40	(65.6)	27	(61.4)		

Table 2. The relationship between the scores of the scales applied to the groups

	Normal endoscopic findings (n: 19)	Antral gastritis (n: 61)	Other (n: 44)	X^2	p
	n (%)	n (%)	n (%)		
Cornell total				30.266	<0.001
Emotive structure	4 (21.1)	22 (36.1)	34 (77.3)		
Strongly neurotic	9 (47.4)	30 (49.2)	6 (13.6)		
Neurotic spirituality	2 (10.5)	1 (1.6)	3 (6.8)		
Very strongly neurotic	4 (21.1)	8 (13.1)	1 (2.3)		
Maladaptation				5.233	0.073
Negative	11 (57.9)	39 (63.9)	36 (81.8)		
Positive	8 (42.1)	22 (36.1)	8 (18.2)		
Depression				12.928	0.002
Negative	6 (31.6)	32 (52.5)	34 (77.3)		
Positive	13 (68.4)	29 (47.5)	10 (22.7)		
Irritability-Anxiety				15.301	<0.001
Negative	9 (47.4)	32 (52.5)	38 (86.4)		
Positive	10 (52.6)	29 (47.5)	6 (13.6)		
Fear-Startle				14.469	0.001
Negative	10 (52.6)	37 (60.7)	40 (90.9)		
Positive	9 (47.4)	24 (39.3)	4 (9.1)		
Psychosomatic Symptoms				7.052	0.029
Negative	16 (84.2)	49 (80.3)	43 (97.7)		
Positive	3 (15.8)	12 (19.7)	1 (2.3)		
Hypochondriac state				12.378	0.002
Negative	12 (63.2)	31 (50.8)	37 (84.1)		
Positive	7 (36.8)	30 (49.2)	7 (15.9)		
Gastrointestinal disorders				8.250	0.016
Negative	13 (68.4)	26 (42.6)	30 (68.2)		
Positive	6 (31.6)	35 (57.4)	14 (31.8)		
Paranoid status				1.367	0.505
Negative	11 (57.9)	35 (57.4)	30 (68.2)		
Positive	8 (42.1)	26 (42.6)	14 (31.8)		
Psychopathic status				4.574	0.102
Negative	17 (89.5)	52 (85.2)	43 (97.7)		
Positive	2 (10.5)	9 (14.8)	1 (2.3)		

Table 3. Analysis of age, age of disease onset, duration of disease, and the scores from Beck Depression Inventory (BDI), Beck Depression Inventory (BDI) and Somatization scales in diagnostic groups

	Normal endoscopic findings (n: 19)	Antral gastritis (n: 61)	Other (n: 44)
	Mean ± SD	Mean ± SD	Mean ± SD
Age (years)	23.3 ± 6.9	27.4 ± 8.5	30.2 ± 12.5 *
Age of disease onset (years)	21.3 ± 5.8	25.2 ± 8.6	28.2 ± 12.6 *
Duration of disease (months)	23.4 ± 33.4	4.28 ± 9.30	25.6 ± 27.4
Beck Depression Inventory	20.1 ± 14.1	16.9 ± 10.6	12.0 ± 6.4 **
Beck Anxiety Inventory	24.7 ± 12.6	24.7 ± 13.3	13.6 ± 8.8 ***
Somatization scale	18.5 ± 4.3	19.4 ± 5.5	13.4 ± 5.0 ***

delayed access to treatment for patients in need of treatment In addition, the increase in workload causes the physician to try to reduce the workload by requesting an excessive number of examinations without following the steps in the therapeutic algorithm. A similar situation applies to magnetic resonance imaging (MRI) studies. One study reported that Turkey is the country with the highest rate of MRI studies among OECD countries, despite the lowest level of allocated resources, which may have been due to the requests of unnecessary examinations [17].

In Turkey, the income of physicians working in public hospitals consists of a fixed monthly salary and in addition, revolving fund payment calculated by a system called performance system. In the performance system, the income of physicians is calculated on the basis of the number of patients served and the number of specialized procedures and operations. Thus, the revolving fund payment system forces the physician to try to serve more patients and to implement more specialized procedures. Therefore, a high workload can also make it easier for physicians to request an examination. In addition, the physician may choose to request an examination in order to protect himself from legal cases.

In the literature, the mean age of onset of gastrointestinal malignancies was reported to be 40 years or more, whereas our study reported a mean age of 23.3 ± 6.9 years in patients with normal endoscopic findings [18]. It can be predicted that

endoscopic examination may be unlikely to give pathological results in young patients. Therefore, detailed screening of psychiatric symptoms in these patients before an invasive procedure may prevent possible unnecessary examinations.

In our study, there were significantly high scores on the scales measuring the severity of anxiety disorder, depression and somatization,

In our study, there were significantly high scores on the scales measuring the severity of anxiety disorder, depression and somatization, which showed that clinicians should not ignore the fact that the EGD procedure is unlikely to provide any evidence in patients with symptoms of the disease. Likewise, a lower mean age in the antral gastritis group compared to the other diagnoses group and statistically significant high scores from the depression, anxiety and somatization scales and the somatic complaints subscale of the Cornell scale support our hypothesis.

It has been reported that 40 to 80% of patients with gastrointestinal symptoms had no pathological findings to explain these symptoms [19]. This suggests a psychosomatic origin of symptoms. The general opinion among physicians is that if there is a psychological etiology, the patient may not benefit from the treatment. In a double-blind randomized controlled trial of 75 patients, Holtmann et al. obtained findings that contradict this idea. They applied the SCL-90 scale to patients and showed that patients with high somatization and anxiety scores benefited more from antacids and other treatments. In fact, this has proven that regular follow-up may relieve symptoms before performing invasive procedures in patients with psychosomatic symptoms. Studies have shown that in most psychological disorders, a regular follow-up of the patient may regress existing symptoms and improve adherence to treatment.

On the other hand, some studies have emphasized the role of immunity in gastric disorders such as gastritis. Considering the studies suggesting the role of inflammatory processes on the etiology of psychiatric diseases, we can suggest a potential common pathogenesis of both gastric and psychiatric disorders, and the coexistence of these two disease groups [20,21].

Conclusion

Our results show that the application of the somatization scale or an equivalent screening scale to screen for psychiatric symptoms prior to the request of endoscopic examination, especially in the young population, may provide early treatment and prevent loss of labor and increased treatment costs. More extensive studies will be able to identify the diagnostic algorithms to be followed before such invasive procedures.

The limitation of our study is that not all patients undergoing the endoscopy procedure have undergone a biopsy examination and therefore diagnoses may have been established based on clinical features and endoscopic images.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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